REMARKS

Applicant respectfully requests reconsideration and allowance of the subject Application. **Claims** 1-28 were originally filed. Claims 21-24 are cancelled without prejudice or disclaimer. Claims 25 and 27-28 are amended. Support for the foregoing amendments can be found in the original specification, claims or drawings – no new matter has been introduced. Accordingly, Claims 1-20 and 25-28 are pending as listed above.

35 U.S.C. § 101 CLAIM REJECTION

Claims 25-28 are rejected under 35 U.S.C. § 101 as being unpatentable for being directed to non-statutory subject matter. Claims 25 and 27-28 have been amended to recite an apparatus for use in a communications system. Claims 25-28 are believed to fall within the statutory class of a new and useful "machine" in accordance with 35 U.S.C. § § 100 and 101, because they recite an apparatus able to produce a transmission frame in an efficiently encoded format for transportation over a synchronous transport medium. Accordingly, Applicant respectfully requests that the § 101 rejection of Claims 25-28 be withdrawn.

35 U.S.C. § 103 CLAIM REJECTION

Claims 1-7 and 10-28 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,430,201 to Azizoglu et al. (hereinafter "Azizoglu") in view of a published paper entitled "A Simple Data Link (SDL) Protocol for High-Speed Packet Networks, by Doshi et al. (hereinafter "Doshi"). Applicant respectfully traverses the rejection.

CLAIMED INVENTION

The claimed invention is directed to an encoding mechanism that takes advantage of a variable length protocol data unit (PDU) with predictable overhead that provides more efficient encoding for a byte/bit synchronous transport medium than conventional block-encoding formats. Block encoded data is first decoded to remove the (native) block encoding, the un-encoded data is post-processed to prepare it for the selected transport medium, and then mapped into a variable length PDU for transmission over byte/bit synchronous transport medium such as Synchronous Optical Network(SONET)/Synchronous Digital Hierarchy (SDH). This minimizes transport overhead, minimizes processing, meets the performance requirements of the transported signal and is more efficient than conventional encoding mechanisms.

REFERENCES

The Office cites Azizoglu and Doshi in its § 103 rejection. Azizoglu is directed to multiplexing and transmitting signals over a SONET medium. Azizoglu uses non-encoded data signals that are multiplexed together to form multiplexed data signals for transmission over a communication link, such as SONET. "A transmitter converts sequential data blocks of each non-encoded signal into corresponding packets, and asynchronously interleaves the packet of the non-encoded signals to create the multiplexed signals." (Azizoglu, Col. 3., lines 29-32). "A receiver then uses a stream identifier of the packets to separate the streams for the different signals, and then re-encodes each signal to re-create the encoded signals at the receive end." (Azizoglu, Col. 3, lines 34-39).

As described above, Azizoglu is particularly limited to using a multiplexing and de-multiplexing scheme for tranmitting multiple signals over a

communication link and provides no teaching or suggestion of the processing of the un-coded signal prior to the mapping data into a variable length protocol data unit (PDU) for transmission over a synchronous transport medium, a point that will be discussed more fully below.

Doshi is concerned with Simple Data Link (SDL) protocol based on the use of a length indicator field and header information, rather than a flag for frame delineation. In particular, Doshi teaches a framing protocol based on the use of length field and a header CRC rather than a flag, for frame delineation and a scrambler designed to protect against malicious attacks. (Doshi, Abstract). While mapping of PDUs is described in Doshi, the mapping is used in conjunction with packets that either still contain block encoded information, or some undisclosed equivalent of it. (See Doshi, section 3.3, page 8).

CLAIM ANALYSIS FOR § 103 REJECTION

Independent Claim 1 recites:

> *A method for use in apparatus of a communications system, the method comprising the steps of:*
> *decoding block encoded data for removing the block encoding from the data;*
> *mapping the data into a variable length protocol data unit (PDU) for transmission over a synchronous transport medium.*

The cited references do not teach or suggest this method. Azizoglu does not teach or suggest mapping of data into a variable length PDU for transmission over a synchronous transport medium. Again, Azizoglu decodes block encoded data signals and then multiplexes them together, as is, to form a multiplexed data signal for transmission over a communications link. (Azizoglu, Col. 3, lines 11-

19). Thus, Azizoglu is devoid of any teaching or suggestion of decoding block encoded data for removing the block encoding from the data, post-processing, and mapping the data into a variable length protocol data unit (PDU) for transmission over a synchronous transport medium.

The Office admits that the mapping feature is not taught by Azizoglu, but argues that Doshi teaches mapping un-encoded data into a variable length PDU. (Office Action, Page 3, paragraph 4). Applicant disagrees. The mapping of data described in Doshi is used in conjunction with packets that still contain block encoded information. (See Doshi, section 3.3, page 8). Again, Doshi merely performs the mapping variable length data that contains encoded information for frame delineation and scrambling to protect against malicious attacks. (Doshi, Abstract). There is no discussion in Doshi of mapping non-encoded block data into a variable length PDU.

Accordingly, there would be no motivation to combine Azizoglu with Doshi, to arrive at Claim 1, since the combination fails to teach or suggest "decoding block encoded data for removing the block encoding from the data and mapping the data into a variable length PDU for transmission over a synchronous transport medium."

Furthermore, even if you combined Azizoglu and Doshi, it is not clear that combination would result in a functional device. For example, how would interleaving of multiple signals described in Azizoglu be combined with the mapping of *encoded* block data in Doshi to arrive at a functioning device? Applicant submits that the combination of Azizoglu and Doshi would probably result in a commercially inoperable method.

Accordingly, for all the reasons described above, the combination of Azizoglu and Doshi fails to teach or suggest Claim 1. Applicant respectfully requests that the § 103 rejection of Claim 1 be withdrawn.

Claims 2-9 depend from Claim 1 and are allowable by virtue of this dependency. Additionally, these claims recite additional features that, when taken together with those of Claim 1, define methods that are not taught or suggested by the Azizoglu/Doshi combination.

Independent Claim 10 recites:

> *10.   A method for use in apparatus of a communications system, the method comprising the steps of:*
> *receiving a signal from a synchronous transport medium, wherein the signal represents information conveyed in a variable length protocol data unit (PDU);*
> *decoding the PDU by examining a type field of the PDU, wherein the type field indicates whether data in a payload portion of the PDU represents either a data frame or a control frame; and*
> *block encoding the data for transmission.*

The cited Azizoglu/Doshi combination does not teach or suggest these features. Namely, for the reasons discussed above with respect to Claim 1, the Azizoglu/Doshi combination does not teach or suggest *"receiving a signal from a synchronous transport medium, wherein the signal represents information conveyed in a variable length protocol data unit (PDU)"* as recited, nor *"decoding the PDU by examining a type field of the PDU, wherein the type field indicates whether data in a payload portion of the PDU represents either a data frame or a control frame"*.

As noted above, Azizoglu does not map data into a variable length PDU, and therefore, does not teach or suggest *receiving a signal from a synchronous*

transport medium, wherein the signal represents information conveyed in a variable length protocol data unit (PDU)."

The Office admits that the signal conveyed in a variable length PDU and "decoding the PDU by examining the type field indicating whether it is a data or a control frame" is not taught by Azizoglu, but argues that Doshi teaches these features. (See Office Action, Page 6). Again, Doshi merely performs the mapping of variable length data that contains encoded information for frame delineation and scrambling to protect against malicious attacks. (Doshi, Abstract). There is no discussion in Doshi of decoding mapped un-encoded block data in variable length PDU.

Accordingly, Claim 10 is allowable over the combination of Azizoglu and Doshi. Applicant respectfully requests that the § 103 rejection of claim 10 be withdrawn.

Claims 11-14 depend from Claim 10 and are allowable by virtue of this dependency. Additionally, these claims recite additional features that, when taken together with those of Claim 10, define methods not taught or suggested by the Azizoglu/Doshi combination.

Independent Claim 15 recites:

> *15.   Apparatus for use in a communications system, the apparatus comprising:*
> *a decoder operative on block-encoded data for removing the block encoding from the data; and*
> *a mapper for mapping the data into a variable length protocol data unit (PDU) for transmission over a synchronous transport medium.*

For the reasons given above with respect to Claims 1 and 10, the cited Azizoglu/Doshi combination fails to teach or suggest an apparatus having "a

decoder operative on block-encoded data for removing the block encoding from the data; and a mapper for mapping the data into a variable length protocol data unit (PDU) for transmission over a synchronous transport medium. Accordingly, the rejection of Claim 15 in view of the combination of Azizoglu and Doshi should be withdrawn.

Claims 16-20 depend from claim 15 and are allowable by virtue of this dependency. Additionally, these claims recite additional features that, when taken together with those of claim 15, define methods not taught or suggested by the Azizoglu/Doshi combination.

<u>Conclusion</u>

Pending Claims 1-20, and 25-28 are in condition for allowance. Applicant respectfully requests reconsideration and issuance of the subject application. If any issues remain that preclude issuance of this application, the Examiner is urged to contact the undersigned attorney before issuing a subsequent Action.

Respectfully Submitted,

Dated: 8/27/04   By: _[signature]_

Robert R. Axenfeld
Reg. No. 37,276